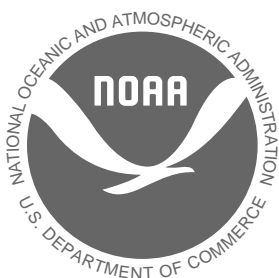


Channel Islands National Marine Sanctuary 1996 Annual Report



The past year has been an exciting one for the Channel Islands National Marine Sanctuary (CINMS). CINMS is part of the Sanctuaries and Reserves Division, operating under the Office of Coastal Resource Management within the National Oceanic and Atmospheric Administration (NOAA). In 1996, CINMS embarked on many new programs that are strategically linked to our congressional mandate and the goals of NOAA.

This Annual Report separates CINMS activities into sections on Management, Research and Education. However, the lines between these three areas are often thin. Our small staff and the interrelationship of our activities require us to wear different hats and work together to further the mission of CINMS.

Management

The following section outlines CINMS management actions in regards to protecting resources, strengthening Sanctuary infrastructure, coordinating with the National Marine Sanctuaries Program and enhancing public and professional awareness of Sanctuary resources.

Resource Protection

Proposed Special Use Air Space, Port Hueneme

CINMS responded to inquiries regarding the proposed use of low flying fighter and jet aircraft within and adjacent to the Sanctuary. CINMS answered inquiries from both the Navy and public and provided written comments to the Environment Assessment and Supplemental Environmental Assessment submitted by the Navy. The Navy canceled this proposed project based on public comment and concern, as well as budget shortfalls.

High Energy Seismic Survey Team

The Minerals Management Service established a team to develop permitting procedures for high energy seismic surveys that would explore for hydrocarbons in the Santa Barbara region. The potential impact on Sanctuary resources led CINMS to take part in the development of this permit process. Over 20 institutions and resource agencies are involved in this ongoing team effort.

NOAA GIS Development Team

CINMS has a well-developed Geographic Information Systems (GIS) project based on regional cooperation among various resource protection agencies. This GIS system is being promoted as a model for other Sanctuaries to emulate. The National Ocean Service has committed staff and expertise to develop a basic GIS system for the Sanctuaries and Reserves Division. A team has been established to evaluate the needs of the two programs and how in-house GIS expertise can be used to satisfy those needs. The CINMS manager is an active member of this team.

Memorandum of Understanding with U.S. Coast Guard

CINMS and the U.S. Coast Guard worked to develop a Memorandum of Understanding (MOU) which would focus the attention of Coast Guard assets on protecting Sanctuary resources and educating mariners who operate within its boundaries. This MOU should be finalized by the second quarter of 1997, greatly enhancing the ability of the Sanctuary to protect its resources.

Damage Assessment

In 1996 the staff of CINMS attended a workshop on damage assessment in Monterey, CA. This workshop instructed Sanctuary personnel in interacting with both state and federal agencies tasked with assessing damage from vessel casualties and other events negatively impacting resources.

Response to Potential Resource Emergencies

The staff of CINMS began developing tools and response scenarios to disasters that threaten Sanctuary resources, such as oil spills and vessel groundings. Our Research Vessel *Ballena* now carries a GIS system and is capable of collecting a variety of water and biological samples. In the event of a resource emergency, we can provide critical data collection, resource information, and command and control functions anywhere in the Sanctuary.

CINMS Infrastructure

Staff

In 1997, the staff of the Sanctuary grew to help us achieve the goals of our management plan, serve the public, participate in the community and improve resource protection. Our permanent staff saw the addition of an Executive Officer. This position was filled by Lt. Stephen Beckwith, a NOAA Corps Officer with extensive experience in fisheries, oceanographic research and the management of research vessels.

CINMS contracted with qualified individuals to provide program specialist services in education and research. We continued to fund a research coordinator through a grant with the University of California at Santa Barbara. We also contracted with a local temporary services company to provide an administrative assistant for the office. The addition of these individuals greatly increased our ability to meet our needs and the needs of the public.

Office Relocation

In 1997, the CINMS offices will move to a new location in the Naval Reserve Building. During 1996 we worked closely with the City of Santa Barbara to negotiate a new lease.

The move created an opportunity for CINMS to reexamine our office needs based on our expanded activities. We hired a contractor to design our floor plan and select office furniture, plus a communications contractor to design our communications and data infrastructure. Much effort was expended to ensure that the new office will meet the requirements of our staff and be equipped to handle both existing and emerging technologies.

Office Organization

CINMS undertook a major effort to evaluate and organize our office resources. We established a new filing system, resource library,



CINMS research vessel *Ballena* off Arch Point, Santa Barbara Island.

© 1996, David O. Brown, Passage Productions

slide library and archive. New computers were purchased to support new staff, and we upgraded our software to current versions. We also rented off-site storage to maximize the use of our existing space on the Santa Barbara waterfront.

Coordination with National Marine Sanctuary Program

Strategic Planning

In 1996 the National Marine Sanctuary Program began a strategic planning process. The CINMS manager was selected to accomplish specific tasks associated with this process, as well as to serve on a subcommittee of field managers supporting the Chief of the Sanctuaries and Reserves Division. Several meetings were held to develop the strategic plan.

Sanctuary Advisory Council and Monterey Bay National Marine Sanctuary (MBNMS)

As a non-voting member of the Sanctuary Advisory Council, the CINMS manager attended monthly council meetings to advise on the management of the site. This year saw increased coordination of activities between CINMS and MBNMS, including the Great American Fish Count, the use of the CINMS research vessel and the acquisition of a joint patrol aircraft.

Enhancing Public and Professional Awareness of CINMS

In response to a White House initiative to recognize local heroes who have made a difference in protecting the environment, NOAA acknowledged 13 individuals and one organization across the United States during the 26th annual Earth Day celebration. CINMS was honored to present the award of national significance to Captain Fred Benko, owner of Condor Charters in Santa Barbara, and Peter Howorth, director of the Marine Mammal Center of Santa Barbara, for their relentless dedication to the marine ecosystem. Both individuals have offered extraordinary support to the community and CINMS staff for over 21 years.

Expanded Partnership, Santa Barbara Museum of Natural History

CINMS continued to enjoy a fruitful relationship with the Santa Barbara Museum of Natural History in the areas of education and increasing public awareness. Together we began developing survey tools to evaluate the demographics of visitors to the Sea Center as well as other cosponsored programs. The establishment of a cadre of trained naturalists, the Whale Corps, greatly enhanced our ability to educate the public about the Sanctuary and its mission.

Cooperative Program, Santa Barbara Maritime Museum

CINMS worked closely with Santa Barbara Maritime Museum to develop exhibits on the rich maritime resources protected by CINMS. This new museum is scheduled to open in the summer of 1997, and attendance is expected to reach over 90,000 visitors annually.

The Maritime Museum is a perfect forum for increasing awareness of local and national sanctuary programs. CINMS partnered with the Channel Islands National Park and the California Marine Archeological Resources Group to develop exhibits educating the public about our mutual interests and resources. The vision includes interactive exhibits on the rich maritime heritage preserved in shipwrecks and submerged cultural resources. Exhibits will also highlight the activities of the Coast and Geodetic Survey and the National Weather Service, both past and present.

Marine Educators' Regional Alliance (MERA)

CINMS took the lead in establishing a group of over 30 organizations concerned with the marine educational needs of the region. The Marine Educators' Regional Alliance assists us in our efforts to create models for managing the Sanctuary and enhancing public awareness. MERA is discussed in more detail in the Education section of this report.



One of the thousands of Elephant seals found in sanctuary waters rests at its rookery on San Miguel Island.

©Glen Allen

Research Activities Panel (RAP)

CINMS was the leader in coordinating a panel of over 25 institutions dedicated to studying the regional marine environment. This Research Activities Panel (RAP) moves the Sanctuary closer to achieving its goals of supporting, promoting and coordinating scientific research on the marine areas found in and near the Sanctuary. Please see the Research section of this report for a more complete description of RAP.

Research

The goals of the CINMS research program are to support, promote and coordinate scientific research on marine resources in CINMS, and to provide sound management based on an enhanced understanding of those resources.

Research Efforts in CINMS

Research Activity Panel (RAP)

The Research Activity Panel was formed in May 1996 following a scoping meeting in March. The RAP provides a forum for discussion and coordination of research efforts in CINMS, and serves as an active link between researchers and Sanctuary management. This panel helps to identify research needs in the Sanctuary and discusses priorities for the CINMS research program. The RAP also increases communication and awareness of Sanctuary programs in the research community.

Members of the RAP include representatives from the following:

- California Coastal Commission
- California Department of Fish and Game
- CINMS Staff
- Channel Islands National Park
- Channel Islands Research Foundation
- Minerals Management Service
- National Marine Fisheries Service
- Southwest Fisheries Science Center
- Santa Barbara Museum of Natural History
- Tatman Foundation
- UC Natural Reserve System
- UC Santa Barbara
- Coastal Marine Institute
- Department of Ecology, Evolution and Marine Biology
- Department of Geography
- Institute for Computational Earth System Science
- Marine Science Institute
- School of Environmental Science and Management
- UC Sea Grant Extension Program

U.S. Geological Survey,
Biological Resources Division

Committees and Symposia

CINMS staff participated in the following committees and symposia in 1996:

- Channel Islands Research Committee
- Channel Islands Marine Research Committee
- Marine Mammal Conference
- Monterey Bay National Marine Sanctuary Symposium

Research Supported by the R/V *Ballena*

Equipment Upgrade

In 1996 the Research Vessel *Ballena* was equipped to support a variety of oceanographic and biological studies. The *Ballena* has a fiberglass hull, measures 56 feet long and 17 feet wide, and draws 5.5 feet of water. The boat carries a 13-foot Avon inflatable with a 15hp Evinrude outboard for shallow-water work, photography and other close-up needs. She has 110 square feet of wet and dry laboratory space aft of the bridge and forward of the working deck. The *Ballena* carries up to four scientists on overnight and extended cruises and up to 10 scientists on day trips. The bridge has been fully equipped with modern electronics including:

- Laser Plot Chart Navigator
- North Star 941X differential GPS
- Trimble Navtract XL GPS
- Furuno LC-90 Loran C
- Raytheon V800 color echo sounder
- Raytheon V700 echo sounder
- Raytheon R41 and R10 radar
- Simrad transducers (38kHz & 200kHz)



State of the art navigation and plotting equipment crowd the wheelhouse of the CINMS research vessel *Ballena*.

The *Ballena* carries the following oceanographic and research equipment:

- SEA-MAC CTD winch model 205EHR, SWL 700lbs
- .322 conducting cable, 800m
- Hydraulic A-frame, SWL 700lbs
- Seabird SBE21 “Seacat” thermosalinograph firmware version 3.1L, memory 128K, baud rate 9600
- WINDACS Data Acquisition Software
- Quad Speed Creative IBM (486 DX, 66MHz). Software: Microsoft Office Professional; Channel Islands Geographic Information System; Arcview

The *Ballena* was at sea 122 days in 1996 to support marine science projects conducted by NOAA, U.S. Geological Survey, Biological Resources Division (formerly the National Biological Service), UC Santa Barbara and other entities.



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The back deck of the CINMS research vessel *Ballena* with its oceanographic winch and equipment ready for deployment.

Whale Habitat and Prey Study (WHAPS 96)

The purpose of WHAPS 96 was to study the distribution of baleen whale activity (focusing on blue whales), the distribution of prey organisms and how habitat factors affect the distribution of both whales and their prey. The National Marine Fisheries Service, Southwest Fisheries Science Center, Scripps Institute of Oceanography and CINMS collaborated on this research. In July six research vessels—including NOAA’s *David Starr Jordan*, Scripps’ *FLIP*, the Sanctuary’s *Ballena* and *Hurricane*—and dozens of researchers rendezvoused in the Sanctuary.

Two major efforts were accomplished on small and large scale surveys during WHAPS 96. Aboard the NOAA ship *David Starr Jordan*, scientists acoustically searched for krill and whales along designated track lines in the Sanctuary and surrounding waters. Simultaneously, observa-

tions of whale sightings and feeding behavior were recorded. Krill were captured for analysis and oceanographic data were collected along the tracks.

The *Ballena* played a lead role in WHAPS 96. Using an automatic data acquisition system which relayed salinity, temperature and depth information overlaid with time and position, the *Ballena* tracked krill abundance and surface oceanographic measurements. The *Hurricane* served as a whale tagging platform, working closely with the *Ballena*.

Time-depth recorders were used to obtain information on whale dives. This portion of the project tagged feeding blue whales (*Balaenoptera musculus*) with recorders encased in specially designed crossbow darts. The *Ballena* followed four individually tagged whales and acoustically tracked krill distribution along their paths. Blue whale fecal samples were also collected. The results of WHAPS 96 are still being processed, but already our understanding of blue whales in the Sanctuary has increased dramatically.

Ashy Storm-petrel Monitoring

CINMS and the U.S. Fish and Wildlife Service (USFWS) have a cooperative agreement to conduct specific work in CINMS. During 1996, USFWS personnel, USGS Biological Resources Division personnel and cooperating scientists used the *Ballena* for research on Ashy Storm-petrels (*Oceanodroma homochroa*). The purpose of this study was to determine breeding success, population size and breeding biology of Ashy Storm-petrels at Santa Cruz Island, California.

Five Ashy Storm-petrel colonies were monitored along the north coast of Santa Cruz Island. Four of the five colonies occurred in sea caves, a habitat previously not well documented for this species. Ten three-day field trips took place between late April and mid-November, with CINMS providing vessel support for eight of the trips.

Researchers worked with volunteers in two-member teams to locate, mark, describe and monitor Ashy Storm-petrel nests. Other crevice-nesting seabirds monitored at the colonies included Cassin's Auklets (*Ptychoramphus aleuticus*), Pigeon Guillemots (*Cephus columba*) and Xantus' Murrelets (*Synthliboramphus hypoleucus*).

Fieldwork on the nesting biology of Ashy Storm-petrels was begun in 1995 by the USGS Biological Resources Division, and will continue in 1997 at the same colonies.

Xantus' Murrelet Radiotelemetry

The Xantus' Murrelet Radiotelemetry project entered its second year in 1996. Capture and research efforts were conducted aboard the *Ballena* at night while anchored off Santa Barbara Island. A total of 341 birds were captured on the water (and at nests) using floodlights and dipnets, including 17 recaptures of birds banded in 1991, 1994, 1995 and 1996. A total of 118 birds were captured in April and 108 birds in May, and 64 radios were deployed.

Radio-tagged birds were followed throughout the year to gather data on their foraging range and distribution. Tagged birds were found to forage mainly north of Santa Barbara Island in April and early May, with a shift to waters south of San Nicolas Island in late May. Blood samples were taken from the birds as well. A third year of data collection is planned in 1997.

This project is funded and supported by the U.S. Navy, the California Department of Fish and Game and CINMS.

Plumes and Blooms Program

The Plumes and Blooms Program is a collaboration among UC Santa Barbara faculty, student and staff researchers at the Institute of Computational Earth System Science; NOAA researchers at the Coastal Services Center (Charleston, SC); and CINMS. Research funding is primarily provided by the NOAA Coastal Ocean Program and the Ocean Optics

Program of the U.S. Office of Naval Research. CINMS is a co-investigator, providing ship support with the *Ballena* and the at-sea research expertise of two veteran NOAA Corps ship captains.

Alternating patterns of brown sediment plumes and green algae blooms which occur each year in the Santa Barbara Channel provide researchers with an excellent field laboratory for understanding and modeling the color of the sea. This is particularly relevant because several satellite sensors will be deployed in space in 1997, each having the potential to make detailed maps of ocean color. The primary goal of the Plumes and Blooms program is to develop numerical algorithms relating the satellite-sensed ocean color signal to useful quantities for ocean scientists and coastal zone managers.

Starting in September 1996, detailed state-of-the-art optical, chemical and biological measurements have been made twice a month aboard the *Ballena*. During each cruise transect observations are conducted from the shelf waters north of Santa Rosa Island to just south of Goleta Point. The twice-monthly repeated observations of this transect are referred to as a "time-series" and provide the equivalent of a slow-motion movie of changing color conditions.

Available satellite imagery will be acquired, processed and analyzed by UCSB using the ICESSE satellite data receiving antenna. All field and satellite data will be made available to interested parties via the World Wide Web (<http://www.icesse.ucsb.edu/pnb>).

Inventory of Coastal Ecological Resources, Northern Channel Islands

Drs. John M. Engle, Richard F. Ambrose and Peter T. Raimondi (UCSB Marine Science Institute) received a grant from the California Coastal Commission to inventory coastal marine resources at the Northern Channel Islands as mitigation for potential oil spills related to tankering in the Santa Barbara Channel.

This four-and-a-half year study (3/94-10/98) will provide a database of existing marine life conditions at Anacapa, Santa Cruz, Santa Rosa and San Miguel islands. The study will identify sensitive species for prioritizing oil spill prevention and cleanup plans, and for assessing environmental damage in the event of oiling. It includes one-time and periodic surveys of rocky intertidal, sandy intertidal and soft-bottom subtidal resources.

Much of the marine species survey work is targeted for Santa Cruz Island, because intertidal monitoring has yet to be established there. Oil dispersion models indicate that Santa Cruz Island is especially vulnerable to potential spills in the Santa Barbara Channel.

During 1994 permanent stations were established at six rocky intertidal sites around Santa Cruz Island, with transportation from the *Ballena* and assistance from CINMS staff. These sites were monitored twice in 1996 with CINMS support and will continue to be monitored

twice a year, in Fall and Spring. Data on key plant and animal species is collected using the same procedures developed for other island and mainland sites by Channel Islands National Park and the U.S. Minerals Management Service, including a combination of fixed plots, transects, still photography and video.

CINMS provided shiptime for surveys at the six Santa Cruz Island sites in March and October 1996. Researchers from the lab of UCSB professor Dr. Steve Gaines also participated in these surveys. Dr. Gaines is focusing on monitoring intertidal temperatures and conducting species recruitment studies at the same sites.

Rockfish Recruitment Study

The *Ballena* and sanctuary staff supported Dr. Milton Love and Mary Nishimoto of the UCSB Marine Science Institute in their ongoing rockfish ecology project. A 10-day midwater trawling survey was conducted in June/July 1996 using a commercial fishing vessel. The survey focused on locating and sampling fish across a coastal thermal front transecting the Northern Channel Islands in CINMS.

The *Ballena* provided important precruise and postcruise hydrographic data one day before and one day after a sampling leg of the midwater trawling survey. Shiptime was dedicated to collecting on-the-run sea surface temperature and surface salinity data using the on-board thermosalinograph and water column profiler with a CTD. Data was collected along the south side of the Northern Channel Islands from Anacapa Island to Santa Rosa Island.

Using the reconnaissance support of the *Ballena* and AVHRR satellite imagery, the targeted thermal front was located during the midwater trawling survey. Its persistence and changes in location, spatial dimensions and intensity were examined.



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A Blue Rockfish off San Miguel Island, one of many rockfish found in CINMS.

Oil Platform Abandonment Study

The *Ballena* and Sanctuary staff provided a research platform for a rockfish tagging study conducted by Dr. Mark Carr of the Coastal Marine Institute at UC Santa Barbara. This project is part of a larger investigation of the ecological consequences of abandonment options for offshore oil and gas production facilities: e.g., complete removal, partial removal in place, or relocation in the Santa Barbara Channel funded by the Minerals Management Service.

Hard substratum reefs represent a small fraction of the available offshore habitat in Southern California, yet they are sites of very high fish production. Platforms can potentially contribute to the production of large numbers of fish by providing additional hard substrate habitat. One unresolved question is whether platforms are producing fish biomass or simply attracting fishes from natural reefs. The tagging study addresses this question by estimating net migration rates between natural reefs and oil/gas platforms.

Dozens of anglers and researchers participated in fish tagging in July and October. Sampling for recaptures using scuba diver surveys followed.

Gray Whale Migration

The *Ballena* and the *Hurricane* were used to support the BBC Natural History Unit's efforts to photograph and document the northern migration of gray whales through the Santa Barbara Channel. Photographers piggy-backed on the Xantus' Murrelet Radiotelemetry Project at Santa Barbara Island, where they shot underwater footage of various fauna and flora that the gray whales might encounter on their migration through the Sanctuary. Topside footage of gray whale cow and calf pairs frolicking in the nearshore kelp beds was taken aboard the *Hurricane*.

Miscellaneous

The *Ballena* was used to transport scientists and researchers to investigate a dead blue whale that washed up on the northwest shore of San Miguel Island. Skin samples, photographs and measurements were taken.

The *Ballena* traveled to the Monterey Bay National Marine Sanctuary, where it was used by MBNMS staff to support researchers from UC Santa Cruz.

David Brown, owner of Passage Productions Inc., is on contract with the National Marine Sanctuary Program to provide video and still documentation of each sanctuary. Brown has sailed aboard the *Ballena* several times and has documented both underwater and topside CINMS resources.

Additional Research Projects Supported by CINMS

Channel Islands Geographic Information System (GIS) Database

To better coordinate management and understanding of the links between Sanctuary resources, CINMS supported the Channel Islands Geographic Information System Database. This database represents a cooperative effort of funding and support from a number of agencies including CINMS, UC Natural Reserve System, UCSB Department of Geography, California Fish and Game Oil Spill Prevention and Response, and Channel Islands National Park.

The complete database is housed at UCSB's Geography Department. A user-friendly, smaller version of the database is available at CINMS headquarters. Marine resources currently in the database include pinnipeds, seabirds, bathymetry, shoreline sensitivity, intertidal, subtidal and terrestrial monitoring stations, sea caves, currents, fishes and invertebrates, and kelp forest canopy.

Channel Islands Research Bibliography

To continue the role of CINMS as a clearinghouse for scientific information about Sanctuary resources, the CINMS research bibliography was updated with 500 new records for a total of over 4,000 annotated records. The CINMS bibliography was combined with bibliographies on the Channel Islands from the Channel Islands National Park, Santa Barbara Museum of Natural History and UC Natural Reserve system. When standardization of the records is complete, this bibliography will contain over 8,000 records and be available as a searchable database on the World Wide Web.

CINMS Site Characterization

The site characterization document for CINMS, *Ecology of the Channel Islands National Marine Sanctuary*, is now available in outline form. The proposed document has eleven chapters which cover the ecology, geology, oceanography, natural history, human history and uses, research, education and management of CINMS. The overview chapter and the intertidal section of the site characterization are now in progress.

Humpback and Blue Whale Photo Identification

CINMS supported blue and humpback whale research in the Santa Barbara Channel by John Calambokidas of Cascadia Research. His work documents individual whales and their resightings along the entire West Coast, providing important insights into the population size of these endangered species.

Kelp Forest Monitoring

CINMS staff continues to participate in the Channel Islands National Park kelp forest monitoring project. Twice annually during the summer months, a total of 16 sites are monitored at the islands with CINMS support. Since 1982, this project has gathered information on 68 taxa of algae, fish and invertebrates that indicate the overall health of the kelp forest ecosystem. The knowledge gained from this monitoring program enables CINP and CINMS to better manage and preserve the kelp forests around the Channel Islands, and elsewhere.

Education

The goals of the CINMS education program are to create awareness about Sanctuary resources, to provide current and accurate information about those resources, and to foster a marine ethic that promotes wise resource use. CINMS acts as a catalyst to link area agencies and organizations, focusing attention on the extraordinary diversity of this special region.

Education Efforts in CINMS

Education Program Specialist

Colleen Angeles was formally hired as Education Program Specialist this year. She began working with the Sanctuary in October 1995 as an intern. Her contagious enthusiasm and talent for working with people enabled her to secure a full-time contract position with CINMS. She serves as the intern/volunteer coordinator, public affairs officer and coordinator of the newly formed Marine Educators' Regional Alliance (MERA).

Marine Educators' Regional Alliance (MERA)

MERA was established in April 1996 under the guidance of CINMS. CINMS and the Santa Barbara of Natural History (SBMNH) hosted a one-day workshop that brought together 40 professionals from 20 area organizations to share information on programs, discuss community needs for marine education and determine how we can work together to develop marine education programs.

Jean-Michel Cousteau, a guest speaker at the workshop, provided inspiration for the group and underscored the tremendous strength that we gain from working together. As a result of this initial meeting, it was agreed that the group would develop a community strategy to improve the quality and accessibility of marine education.

MERA is currently composed of 30 area organizations. Meetings are held quarterly. In 1997 MERA's activities will include designing a logo, creating a web page, presenting an outstanding teacher award and producing a brochure for its member organizations.

The following institutions are members of MERA:

American Oceans Campaign
Cabrillo High School Aquarium, Lompoc
California Department of Fish and Game
California Seafood Council, Santa Barbara
California State Parks
Catalina Island Marine Institute
Channel Islands National Marine Sanctuary, NOAA
Channel Islands National Park
Condor Charters

Jean-Michel Cousteau, Inc.
Island Packers
Los Marineros Advisory Board
Marine Mammal Center
The Nature Conservancy
Passage Productions
Regional Alliance for Information Networking
Santa Barbara Channel Aquarium
Santa Barbara City College
Marine Biology Department
Marine Technology Department
Santa Barbara County Education Office
Santa Barbara Maritime Museum
Santa Barbara Museum of Natural History
Santa Barbara Park and Recreation
Department
Santa Barbara Salmon Enhancement
Association
Surfrider Foundation
UC Cooperative Extension
4-H Development Program
Sea Grant Extension Program
UC Santa Barbara
Environmental Studies Program
Marine Science Institute
Natural Reserve System

Meetings and Symposia

CINMS staff attended the following meetings and symposia in 1996:

National Marine Educators Association
North American Association for
Environmental Education
Southwest Marine and Aquatic Educators
Association

The Great American Fish Count Summit

The Great American Fish Count (GAFC) began on the West Coast in 1992 to raise public awareness about trends in fish populations and to offer a non-extractive activity for divers. There has been tremendous interest in this annual two-week event, with hundreds of divers participating each year.

CINMS has served as a regional coordinator for the GAFC since 1994. The Reef Environmental Education Foundation (REEF), which developed a successful diver monitoring program in the western Atlantic, has expressed an interest in expanding their program to the West Coast and working with the GAFC to form an integrated Volunteer Fish Monitoring Network.

CINMS hosted a Great American Fish Count Summit in November 1996 to explore opportunities for REEF and GAFC to collaborate and bring together other organizations interested in a Volunteer Fish Monitoring Network. While the meeting focused on West Coast waters, many of the topics were of national scope. The summit's goal was to clarify how to structure a national fish monitoring network and how to define the roles of the network's participants.

Representatives from 12 different organizations participated in the summit, including the National Marine Sanctuary Program, Channel Islands National Park, American Oceans Campaign, Catalina Conservancy, University of California, Marine Conservation Network (MCN) and Regional Alliance for Information Networking (RAIN).

As a result of the meeting, MCN took the lead as West Coast Regional Coordinator for the National Fish Monitoring Network. REEF agreed to work with the organizers of the GAFC to develop a scantron survey form and modify existing software for use with West Coast fish species. GAFC organizers agreed to work with REEF to promote the year-round East Coast program and collaborate on a year-round West Coast program. A curriculum development committee was formed to create a standardized training curriculum for divers.

Also, the American Oceans Campaign agreed to partner with MCN, REEF and NOAA to write a grant proposal to the National Fish and Wildlife Foundation for funding a nationally coordinated event.



© 1996, David O. Brown, Passage Productions

Passengers on the *Condor* during one of the CINMS sponsored sanctuary cruises view common dolphins in the sanctuary.

Live Video Link from CINMS and Channel Islands National Park (CINP)

CINMS and CINP reached an interagency agreement this year to fund a feasibility study on establishing video transmission sites in the Sanctuary and Park, as well as receiving sites on the mainland. The goal of the system is to broadcast real-time presentations to the Sea Center and the CINP Visitor Center for use in public education.

This permanent video uplink system promises to be a powerful educational tool, allowing the public to understand and appreciate Sanctuary and Park resources without having to leave the mainland.

Partnership with RAIN and New Web Page Design

CINMS worked closely with RAIN in 1996 to demonstrate a community/government partnership that provides education and public outreach. RAIN is a noted developer of Internet access and education programs. RAIN and CINMS, along with the 30 agencies represented in MERA, are developing a comprehensive web site that provides community learning opportunities.

CINMS also worked with RAIN and a contracted webmaster to redesign and update its existing web pages, making them more dynamic and interactive. New features include a search engine, online marine resource directory, photo gallery, guest book and image maps of the Channel Islands. We are currently developing an online "living journal" where CINMS researchers will document their studies in real time.

Tomol Building Project

CINMS and the Chumash Maritime Association initiated a project to construct two tomols (plank canoes used by the native Chumash). CINMS contracted Peter Howorth, an experienced plank canoe builder, to begin construction in mid-November. CINMS hopes that this project will increase community awareness of the rich maritime and cultural history of the Channel Islands region.

Promoting Public Awareness of Sanctuary Resources

Sanctuary Cruises

Over the past year, CINMS and SBMNH sponsored five public educational cruises to the Sanctuary aboard the *Condor*. More than 400 passengers enjoyed these special cruises, which featured whale watching and a narrated voyage along the western end of Santa Cruz Island to view seabirds, harbor seals and sea lions. Cruise highlights included diver-conducted video tours of the kelp forests and reefs, skiff rides into Painted Cave and an onboard touch tank featuring diverse marine life. Large numbers of blue whales returned to CINMS this summer and provided some exciting viewing opportunities.

In October CINMS sponsored a shipwreck cruise to the *Winfield Scott*, a side wheel paddle steamer that went aground off Anacapa Island in 1853. Passengers were able to view the shipwreck via divers equipped with video and voice communication. This system allowed passengers to interact with divers and ask questions while they were underwater. The cruise was a cooperative effort with the SBMNH, Santa Barbara Maritime Museum, Channel Islands National Park and California Marine Archeological Resources Group.



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A Garibaldi poses for its portrait during the underwater photography workshop.

Underwater Photography Workshop

CINMS and SBMNH cosponsored a successful underwater photography/video workshop in September with professional photographer Tom Campbell aboard the dive vessel *Vision*.

By “hunting” with their cameras, the 25 participants captured the beauty of Sanctuary marine life on film. Onboard film processing and expert tips provided opportunities for immediate improvement in image quality. One participant commented, “This was a beneficial learning experience, in both environment and U/W photography. I won’t forget it.” Other passengers echoed the same sentiments.

National Geographic photographer David Doubilet was on board to document CINMS for an upcoming article on the 25th anniversary of the National Marine Sanctuary Program. Doubilet gave a slide presentation and offered helpful advice to workshop participants.

Because of the enthusiasm generated from this year’s trip, we look forward to sponsoring two workshops next year.

Volunteer and Intern Program

Throughout the year, CINMS staff members worked with interns and volunteers from UC Santa Barbara, Santa Barbara City College, Brooks Institute of Photography and Westmont College. These students contributed more than 500 hours to assist CINMS staff with research and education projects, Sanctuary cruises, presentations to local schools, beach clean-ups and community outreach events. CINMS interns and volunteers learn valuable skills that better prepare them for jobs in the marine resource management field.

Ecotourism Workshop for Cal Poly Students

CINMS hosted an ecotourism workshop in November for California

Polytechnical State University of San Luis Obispo undergraduates studying natural resources and tourism. A panel representing CINMS, Condor Charters, Sea Center, Island Packers and Passage Productions briefed the students on their organizations and discussed how they play a part in ecotourism. The workshop allowed students to explore issues ranging from major users of CINMS to marketing and financial aspects of local agencies. Following the workshop, the students visited the Sea Center and were given a special tour of the facilities.

Interpretive Panels at Shoreline Park

CINMS worked with the City of Santa Barbara and local designer Marie Murphy to develop four new interpretive panels for Shoreline Park in Santa Barbara. The park overlooks the Channel Islands and offers a perfect spot for the panels, which feature information on gray whale migration, dolphins, sandy beaches and the Sanctuary marine environment. A new whale bench and telescope complement the educational panels. CINMS will host a special unveiling ceremony in early 1997.

Boat Naming Contest

CINMS involved the community in naming its new research vessel by sponsoring a boat-naming contest. Youngsters aged 14 and under submitted more than 500 creative entries from California and four other states. Judges selected the name *Ballena* (which means whale in Spanish) submitted by a fifth grade student from Santa Barbara. The winner received a free trip to Anacapa Island.

Although the primary function of the *Ballena* is research, she has also served as an educational platform for Whale Corps training, Teachers as Marine Scientists, 34 Degrees North Marine Science Club and UC Santa Barbara marine biology courses.

Participation in Community Outreach Events

CINMS staff and volunteers participated in the following public outreach events in 1996:

- Earth Day
- Santa Barbara Harbor Festival
- SBMNH Afternoon for Educators
- Ventura Sea Fair
- Whale Festival

Library

CINMS established a slide and resource library (including books, bibliographies, reprints, directories and all other printed materials produced and obtained by CINMS), consisting of a central database and cataloging system. The library will be useful to Sanctuary staff, teachers, students, researchers and other interested individuals.

Cooperative Agreement Programs with Santa Barbara Museum of Natural History

CINMS continued to support the Sea Center, Los Marineros and the *Alolkoy* newsletter through a cooperative agreement with SBMNH. For over 10 years, CINMS and SBMNH have developed and implemented innovative, hands-on marine education programs that target all age groups. Our efforts focus on increasing awareness of the incredible diversity of marine life found within the Sanctuary and stimulating interest in protecting this unique and fragile ecosystem.



CINMS manager Ed Cassano introduces Angelina Chavez during the renaming ceremony for the CINMS research vessel *Ballena*.

Whale Corps

The Whale Corps volunteer naturalist program began in January 1996 under the joint sponsorship of CINMS and SBMNH. This program offers a new avenue for the public to learn about the Sanctuary environment. The program's 70 volunteers attend an intensive six-week training course on the natural history and biology of the region, with a special focus on whales and other marine mammals.

Whale Corps members serve as interpreters on Santa Barbara's largest whale watching vessel, the *Condor*, and enrich the passengers' experience by providing hands-on learning materials and narration about whale behavior, biology and natural history. They also report marine mammal sightings and assist with photo identification of blue and humpback whales. Whale Corps members conduct outreach talks to schools and participate in community events such as Earth Day and the Harbor Festival.

This year over 25,000 people were served by Whale Corps volunteers. The next recruitment and training will be held in Fall 1997. Training sessions of Whale Corps volunteers involve both CINMS and SBMNH staff.

Los Marineros Marine Education Program

In 1996, for the first time in its 10-year history, the Los Marineros Marine Education Program reached every fifth grade student in the Santa Barbara School District—a total of 850 students in 32 classes at 10 elementary schools. As the program concludes its first decade, plans are underway to update the Los Marineros Curriculum Guide, aligning it more closely with the California State Science Framework and the new national science standards.

Los Marineros students participated in a series of fall beach clean-ups of the Santa Barbara waterfront which yielded important data on the status of local beaches. This data, along with pictures, student comments and actual examples of debris, was presented in a special exhibit entitled "Turning the Tide on Trash," installed at the Sea Center in January 1996.

The clean-up project, funded by Chevron Production Companies, concluded with a formal presentation (in Spanish and English) to the Mayor and Santa Barbara City Council by Los Marineros students at Cleveland School. The project will be repeated in 1997, with the addition of a virtual exhibit on the Internet titled "Turning the Tide on Trash II."

Los Marineros staff were joined by CINMS staff to present "Making Waves," a series of marine education workshops for elementary teachers throughout Santa Barbara County. With County funding through the 1994 Coastal Resource Enhancement Fund, these day-long workshops gave teachers the chance to try hands-on marine science lessons from the Los Marineros curriculum. The workshops were held at

the Museum of Natural History and Cabrillo High School in Lompoc.

In October, Los Marineros, Sea Center and CINMS staff organized "Buckets, Baleen and Other Beachy Stuff," a professional development seminar for members of the Southwest Marine/Aquatic Educators Association (SWMEA) that was hosted jointly by CINMS and SBMNH. The 55 attendees from throughout the Southwest began the day with a walking tour of Stearns Wharf, followed by a chance to observe Los Marineros students participating in the Sea Center's "Oceanographer for a Day" program.

Later, at the Museum of Natural History, presentations by Island Packers, Catalina Island Marine Institute and the Cabrillo Marine Aquarium gave SWMEA members a chance to learn how other institutions use hands-on materials in their public and school programs. A roundtable discussion, led by SWMEA President Joy Wolf, afforded the opportunity to discuss important topics facing marine educators today. As a result, SWMEA membership increased nearly 20% and other institutions have lined up to host similar seminars in the future.

A new program for parents of Los Marineros students called PALS (Parents Assist in Learning Science) began in December 1996. The purpose of this program is to involve parents in the learning process and increase their participation in the classroom and on field trips. Sixty parents were invited to the first PALS meeting.

The Los Marineros program received grants totaling \$39,000 from Chevron, Texaco, Exxon, Sunrise Rotary Club and the Wallis Foundation. In-kind funds totaling \$21,000 were received from Condor Boat Charters.

“34 Degrees North”

Curriculum Guide

CINMS and SBMNH jointly produced a new middle school curriculum guide titled “34 Degrees North: Sanctuary Interaction” with funding from the National Fish and Wildlife Foundation. This curriculum guide provides background information for teachers and activities which focus on the biological diversity and physical features of the Sanctuary. Lessons include marine navigation, biodiversity, geology, climate and weather, and Sanctuary management. Santa Barbara area middle school teachers reviewed the guide and are excited about incorporating it into their curriculum next year. Lessons in the guide are closely aligned with the California State Science Framework.

Sea Center

Consistent with its previous years of operation, the Sea Center continued to attract 75,000 visitors and more than 6,000 school children who learned about the Sanctuary through live exhibits and tours. This year 60 student volunteers and 30 docents taught classes at the Sea Center. As part of the “Museum Comes Alive” Program for 1996, Sea Center staff and volunteers utilized the touch tank amphitheater to engage visitors in programs about local marine life, grunion life cycles and plankton. Each of these presentations began with an emphasis on the location and designation of CINMS and how the Sanctuary and Museum work together to promote awareness of this special region.

A contract to begin construction of the long-anticipated touch tank canopy was awarded at the end of 1996. On-site construction will take place in early 1997. This major renovation to the Sea Center will permit all-weather usage of the touch tank, add exhibition space, improve handicapped access and greatly assist visitor flow. The new structure will also feature monitors and speakers for public presentations.



Students participating in the sanctuary co-sponsored 34 Degrees North program pose for a picture aboard the CINMS research vessel *Ballena* after returning from a cruise observing whale behavior.

Alolkoy

Alolkoy, the Sanctuary’s quarterly newsletter, maintained its circulation at 3,000. The publication reached a broad audience of scientists, lawmakers, teachers and students. Themes for 1996 included channel research (Spring), marine education (Summer), shipwrecks and rescues (Fall) and whales (Winter). Vic Cox, *Alolkoy* editor for the past two years, left to pursue a full-time position at UC Santa Barbara. In December 1996 we hired a new editor, Cynthia Anderson. A 15-year Santa Barbara resident, Cynthia offers extensive experience in writing and editing for book publishers, businesses and government agencies.

Front Cover: A blue whale shows its flukes in the Sanctuary during the Whale Habitat and Prey Study, ©1996, David O. Brown, Passage Productions.



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